

Errors Corrected by the STIC Systems Branch

1600

Serial Number: 09/699,652A

CRF Processing Date: 11/4/2002
Edited by: AE
Verified by: (STIC staff)

Changed a file from non-ASCII to ASCII

ENTERED

11/4/2002

Changed the margins in cases where the sequence text was wrapped down to the next line.

11/4/2002

Edited a format error in the Current Application Data section, specifically:

Edited the Current Application Data section with the actual current number. The number inputted by the applicant was the prior application data; or other _____.

Added the mandatory heading and subheadings for "Current Application Data".

Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.

Changed the spelling of a mandatory field (the headings or subheadings), specifically:

Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were:

Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:

Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.

Inserted colons after headings/subheadings. Headings edited included:

RECEIVED

NOV 07 2002

Deleted extra, invalid, headings used by an applicant, specifically:

TECH CENTER 1600/2900

Deleted: non-ASCII "garbage" at the beginning/end of files; secretary initials/filename at end of file; page numbers throughout text; other invalid text, such as _____.

Inserted mandatory headings, specifically:

Corrected an obvious error in the response, specifically:

Edited identifiers where upper case is used but lower case is required, or vice versa.

Corrected an error in the Number of Sequences field, specifically:

A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.

Deleted ending stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a PatentIn bug). Sequences corrected: _____.

Other:

*Examiner: The above corrections must be communicated to the applicant in the first Office Action. DO NOT send a copy of this form.

3/1/95



1600

RAW SEQUENCE LISTING
 PATENT APPLICATION: US/09/699,652A

DATE: 11/04/2002
 TIME: 17:50:29

Input Set : A:\PTO.AMC.txt
 Output Set: N:\CRF4\11042002\I699652A.raw

P. 6

3 <110> APPLICANT: Cahoon, Edgar B.
 4 Cahoon, Rebecca E.
 5 Kinney, Anthony J.
 6 Rafalski, J. Antoni
 8 <120> TITLE OF INVENTION: TRIACYLGLYCEROL LIPASES
 10 <130> FILE REFERENCE: BB1168 US NA
 12 <140> CURRENT APPLICATION NUMBER: 09/699,652A
 13 <141> CURRENT FILING DATE: 2002-10-30
 15 <150> PRIOR APPLICATION NUMBER: 60/083,688
 16 <151> PRIOR FILING DATE: 1988-04-30
 18 <150> PRIOR APPLICATION NUMBER: PCT/US99/09280
 19 <151> PRIOR FILING DATE: 1999-04-29
 21 <160> NUMBER OF SEQ ID NOS: 36
 23 <170> SOFTWARE: Microsoft Office 97
 25 <210> SEQ ID NO: 1
 26 <211> LENGTH: 751
 27 <212> TYPE: DNA
 28 <213> ORGANISM: Zea mays
 30 <400> SEQUENCE: 1
 31 gcacgagatc accggcaaga actactgcct caacagctcc gccgtcgacg tcttcctcaa 60
 32 gtacgagccc cagccgaccc ccaccaaaac catggtccac ttgcgtcaaa ccgtgcgcga 120
 33 cggcgtgctg accaagtacg actacgtgct gccggagcgg aacatcgcca gctacggcca 180
 34 ggccgagccg cccgtgtacc ggtatgtccgg catcccgccg agcttcccgcc tcttcctcag 240
 35 ctacggcggc cgggactcgc tcgcccggacc cggccgacgtg cgcctccccc tgcaggacct 300
 36 ccggggccac gaccaggaca agtcacgggt gcagttacccg gacaaggatcg cgcacctcga 360
 37 cttcatcatc ggcgtctgct ccaaggacta cgtctacaag gacatgtatcg acttccctaaa 420
 38 cccgttcaac tagtacttagc atatatattt gttcaatcg gtgtcgctt cagccccagc 480
 39 aggatttagac aaaaaaaaggg ggggacactg cagctcgtaa acgttgtcca tacagattat 540
 40 cagaggtgaa aaccatacat gatgttaattt agcatttagat agttaaaaca tggagctgcc 600
 41 tcagttatggaa ggattgtcaa ctactctcca tcacagcagt aggtgtatcg tagaagatgt 660
 42 attgtcacac tggatgtgtt gcaaatttgc aacacagtga ttactaatat aaaaaataact 720
 43 cttgagttaa aaaaaaaaaa aaaaaaaaaa a 751
 45 <210> SEQ ID NO: 2
 46 <211> LENGTH: 143
 47 <212> TYPE: PRT
 48 <213> ORGANISM: Zea mays
 50 <400> SEQUENCE: 2
 51 His Glu Ile Thr Gly Lys Asn Tyr Cys Leu Asn Ser Ser Ala Val Asp
 52 1 5 10 15
 54 Val Phe Leu Lys Tyr Glu Pro Gln Pro Thr Ser Thr Lys Thr Met Val
 55 20 25 30
 57 His Phe Ala Gln Thr Val Arg Asp Gly Val Leu Thr Lys Tyr Asp Tyr
 58 35 40 45

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60 Val Leu Pro Glu Arg Asn Ile Ala Ser Tyr Gly Gln Ala Glu Pro Pro
61 50 55 60
63 Val Tyr Arg Met Ser Gly Ile Pro Pro Ser Phe Pro Leu Phe Leu Ser
64 65 70 75 80
66 Tyr Gly Gly Arg Asp Ser Leu Ala Asp Pro Ala Asp Val Arg Leu Leu
67 85 90 95
69 Leu Gln Asp Leu Arg Gly His Asp Gln Asp Lys Leu Thr Val Gln Tyr
70 100 105 110
72 Leu Asp Lys Phe Ala His Leu Asp Phe Ile Ile Gly Val Cys Ala Lys
73 115 120 125
75 Asp Tyr Val Tyr Lys Asp Met Ile Asp Phe Leu Asn Arg Phe Asn
76 130 135 140
78 <210> SEQ ID NO: 3
79 <211> LENGTH: 647
80 <212> TYPE: DNA
81 <213> ORGANISM: Catalpa sp.
83 <400> SEQUENCE: 3
84 ttatcttca ggagagattt ttgtttgaat gtcggcccg ttgagcttt tggaaaat 60
85 taccctccat cttccgtgaa ttgagacccc tgcctatcg gctcaaactg tccgatatgg 120
86 gatcctaccc aaatacact acggcaatcc cagctcaac ttggcccatt atggtaatc 180
87 cagacctccc gtttacattt tattcaagat tcccctcgac attccgctct tcctaagcta 240
88 tggaggacaa gatgcattgt cgatgtttaa ggatgtcgag acattgtctg atagtcctaa 300
89 gttacacgtat gtggataaagc tgcgtgtca gtataatcaag gattatgctc atgcccactt 360
90 cattatcgga gttactgcaa aagatatagt ttataatcag attgttaactt ttttcagaaa 420
91 ccaggcttga gaggttcttg attttggagt gctttgctg tgagaatgca acagttgtt 480
92 ccactcttgt tgaatgtgaa taagccattt ccgagagatt taatggctgg taaagcttat 540
93 tagttactc atagatacat gtaagaagca acccgataca tagttgaat ccttatctc 600
94 gaaaaggtat tgcatttcct ctctacgtc aaaaaaaaaa aaaaata 647
96 <210> SEQ ID NO: 4
97 <211> LENGTH: 116
98 <212> TYPE: PRT
99 <213> ORGANISM: Catalpa sp.
101 <400> SEQUENCE: 4
102 Ile Glu Thr Pro Val His Met Ala Gln Thr Val Arg Tyr Gly Ile Leu
103 1 5 10 15
105 Pro Lys Tyr Asp Tyr Gly Asn Pro Ser Phe Asn Leu Ala His Tyr Gly
106 20 25 30
108 Glu Ser Arg Pro Pro Val Tyr Asp Leu Ser Lys Ile Pro Leu Asp Ile
109 35 40 45
111 Pro Leu Phe Leu Ser Tyr Gly Gln Asp Ala Leu Ser Asp Val Lys
112 50 55 60
114 Asp Val Glu Thr Leu Leu Asp Ser Leu Lys Leu His Asp Val Asp Lys
115 65 70 75 80
117 Leu His Val Gln Tyr Ile Lys Asp Tyr Ala His Ala Asp Phe Ile Ile
118 85 90 95
120 Gly Val Thr Ala Lys Asp Ile Val Tyr Asn Gln Ile Val Thr Phe Phe
121 100 105 110
123 Arg Asn Gln Ala
124 115

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Input Set : A:\PTO.AMC.txt
Output Set: N:\CRF4\11042002\I699652A.raw

126 <210> SEQ ID NO: 5
127 <211> LENGTH: 705
128 <212> TYPE: DNA
129 <213> ORGANISM: Catalpa sp.
131 <220> FEATURE:
132 <221> NAME/KEY: unsure
133 <222> LOCATION: (526) /
134 <223> OTHER INFORMATION: n = A, C, G, or T
136 <220> FEATURE:
137 <221> NAME/KEY: unsure
138 <222> LOCATION: (561) /
139 <223> OTHER INFORMATION: n = A, C, G, or T
141 <220> FEATURE:
142 <221> NAME/KEY: unsure
143 <222> LOCATION: (585) /
144 <223> OTHER INFORMATION: n = A, C, G, or T
146 <220> FEATURE:
147 <221> NAME/KEY: unsure
148 <222> LOCATION: (593) /
149 <223> OTHER INFORMATION: n = A, C, G, or T
151 <220> FEATURE:
152 <221> NAME/KEY: unsure
153 <222> LOCATION: (664) /
154 <223> OTHER INFORMATION: n = A, C, G, or T
156 <220> FEATURE:
157 <221> NAME/KEY: unsure
158 <222> LOCATION: (679) /
159 <223> OTHER INFORMATION: n = A, C, G, or T
161 <400> SEQUENCE: 5
162 gcacgagcca acagttcct aaatttagct cttctaattcc ttctctcatt atcactactc 60
163 ctacccatc aatcattcgc ctccagccgc cgccgtttc ttccgcagaa tgatgtcggt 120
164 cttccgcccgg acggcggtttg ctccaccggcc gtaactgtac acggttataaa atgccaagaa 180
165 tttgaagtaa cgactgatgta tggctatata ttaagcgtgc agaggattct ggagggccgg 240
166 gccggaggag gagggccgaa gcggccgcgg gttctgtgc aacatgggggt tcttgtgac 300
167 gggatgacgt ggctggtgaa tggaccggaa caatcttgg cgatgatatt ggctgacaat 360
168 gggttcgacg tctggatttc taacataaga ggaacttaggt ttagtcgtcg tcatgtcagc 420
169 cttgatccctt ccgatcctgaa atattggat tgggcatggg acgatcttgg tgacccacgaa 480
W--> 170 cttaccatcc ctgatcgagt tagtggtcag acaaacgggt cagaanacac actacatagg 540
W--> 171 gcaatccatg gggaaacctta ntagcttgg gatcaacttt aggangggaaa cangttggca 600
172 gggtaaatcg gctgtatgtt aagccaaattt gctaacgagt catatgcaac tgctctcgag 660
W--> 173 ttgnctagca gatccttgnnt gggaaacaca cgatcttggc ctgcg 705
175 <210> SEQ ID NO: 6
176 <211> LENGTH: 157
177 <212> TYPE: PRT
178 <213> ORGANISM: Catalpa sp.
180 <400> SEQUENCE: 6
181 Ala Arg Ala Asn Ser Phe Leu Asn Leu Ala Leu Leu Ile Leu Leu Ser
182 1 5 10 15
184 Leu Ser Leu Leu Leu Pro His Gln Ser Phe Ala Ser Ser Arg Arg Arg

RAW SEQUENCE LISTING
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DATE: 11/04/2002
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Input Set : A:\PTO.AMC.txt
Output Set: N:\CRF4\11042002\I699652A.raw

185 20 25 30
 187 Phe Leu Pro Gln Asn Asp Val Val Leu Pro Pro Asp Gly Val Cys Ser
 188 35 40 45
 190 Thr Ala Val Thr Val His Gly Tyr Lys Cys Gln Glu Phe Glu Val Thr
 191 50 55 60
 193 Thr Asp Asp Gly Tyr Ile Leu Ser Val Gln Arg Ile Leu Glu Gly Arg
 194 65 70 75 80
 196 Ala Gly Gly Gly Pro Lys Arg Pro Pro Val Leu Leu Gln His Gly
 197 85 90 95
 199 Val Leu Val Asp Gly Met Thr Trp Leu Val Asn Gly Pro Glu Gln Ser
 200 100 105 110
 202 Leu Ala Met Ile Leu Ala Asp Asn Gly Phe Asp Val Trp Ile Ser Asn
 203 115 120 125
 205 Ile Arg Gly Thr Arg Phe Ser Arg Arg His Val Ser Leu Asp Pro Thr
 206 130 135 140
 208 Asp Pro Glu Tyr Trp Asp Trp Ala Trp Asp Asp Leu Gly
 209 145 150 155
 211 <210> SEQ ID NO: 7
 212 <211> LENGTH: 859
 213 <212> TYPE: DNA
 214 <213> ORGANISM: Zea mays
 216 <220> FEATURE:
 217 <221> NAME/KEY: unsure
 218 <222> LOCATION: (46) / /
 219 <223> OTHER INFORMATION: n = A, C, G, or T
 221 <220> FEATURE:
 222 <221> NAME/KEY: unsure
 223 <222> LOCATION: (231) / /
 224 <223> OTHER INFORMATION: n = A, C, G, or T
 226 <400> SEQUENCE: 7
 W--> 227 aaagcaaaca acggccgaca tggtgccccc aggaaaagcg cttgcngcgc cccagctcct 60
 228 cctcctcggt ttcctctgcc tcctagccgg tggagccgc gcatccccgc ccacagacgc 120
 229 gctacgcccgc gtctccccgc gcgcgggggc cggggcctc tgccagcagc tgcccttgcc 180
 W--> 230 gcagggttacc cgtgcaccga gcacaccgtt caaacggatg atggctttct nttgtctctt 240
 231 cagcatattc cacatggcag aaatggatt gcagataata ctggacacctc agttttctt 300
 232 cagcacggtc ttttccaggg tggagataca tggttcataa actccaatga acaatcaactt 360
 233 ggatataatcc ttgctgacaa tggttttgtat gtttgggtcg gaaatgtcg tggcacacgt 420
 234 tggagtaaag gccactctac tctctctgtt catgataagc ttttctggta ttggagttgg 480
 235 caagaccttg ctgaatacga cgtttggca atgttaagct atgtatatac agttgcacag 540
 236 tccaaaattt tttatgtggg acattcacag ggaactatca tgggttggc tgcgttaca 600
 237 atgcctgaaa cagtaaagat gataagctc gctgcgttc tttgtcccat ttcttacatt 660
 238 gatcacgtca gtgctagtt ttttctttaga gcaggccca tgcatttgcata tgagatgttt 720
 239 gttattatgg gcatccatca gttgaacttc cggagcgata tgggtgtaca gatatttagat 780
 240 tcgcgtgtgc atgatgaaca tttggactgc aacgatctgt tatcttcaat aacagtcaaa 840
 241 actgttggttc aatcatctc 859
 243 <210> SEQ ID NO: 8
 244 <211> LENGTH: 286
 245 <212> TYPE: PRT
 246 <213> ORGANISM: Zea mays

RAW SEQUENCE LISTING
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Input Set : A:\PTO.AMC.txt
Output Set: N:\CRF4\11042002\I699652A.raw

248 <220> FEATURE:
249 <221> NAME/KEY: UNSURE
250 <222> LOCATION: (16)
251 <223> OTHER INFORMATION: ANY AMINO ACID
253 <400> SEQUENCE: 8
W--> 254 Lys Ala Asn Asn Gly Gly His Gly Ala Pro Arg Lys Ser Ala Cys Xaa
255 1 5 10 15
257 Ala Pro Ala Pro Pro Pro Arg Val Pro Leu Pro Pro Ser Arg Trp Ser
258 20 25 30
260 Pro Arg Ile Pro Ala His Arg Arg Ala Thr Pro Arg Leu Pro Ala Arg
261 35 40 45
263 Gly Gly Arg Trp Pro Leu Pro Ala Ala Ala Pro Ala Ala Gly Tyr Pro
264 50 55 60
266 Cys Thr Glu His Thr Val Gln Thr Asp Asp Gly Phe Leu Leu Ser Leu
267 65 70 75 80
269 Gln His Ile Pro His Gly Arg Asn Gly Ile Ala Asp Asn Thr Gly Pro
270 85 90 95
272 Pro Val Phe Leu Gln His Gly Leu Phe Gln Gly Gly Asp Thr Trp Phe
273 100 105 110
275 Ile Asn Ser Asn Glu Gln Ser Leu Gly Tyr Ile Leu Ala Asp Asn Gly
276 115 120 125
278 Phe Asp Val Trp Val Gly Asn Val Arg Gly Thr Arg Trp Ser Lys Gly
279 130 135 140
281 His Ser Thr Leu Ser Val His Asp Lys Leu Phe Trp Asp Trp Ser Trp
282 145 150 155 160
284 Gln Asp Leu Ala Glu Tyr Asp Val Leu Ala Met Leu Ser Tyr Val Tyr
285 165 170 175
287 Thr Val Ala Gln Ser Lys Ile Leu Tyr Val Gly His Ser Gln Gly Thr
288 180 185 190
290 Ile Met Gly Leu Ala Ala Phe Thr Met Pro Glu Thr Val Lys Met Ile
291 195 200 205
293 Ser Ser Ala Ala Leu Leu Cys Pro Ile Ser Tyr Leu Asp His Val Ser
294 210 215 220
296 Ala Ser Phe Val Leu Arg Ala Val Ala Met His Leu Asp Glu Met Leu
297 225 230 235 240
299 Val Ile Met Gly Ile His Gln Leu Asn Phe Arg Ser Asp Met Gly Val
300 245 250 255
302 Gln Ile Leu Asp Ser Leu Cys Asp Asp Glu His Leu Asp Cys Asn Asp
303 260 265 270
305 Leu Leu Ser Ser Ile Thr Val Lys Thr Val Val Gln Ser Ser
306 275 280 285
308 <210> SEQ ID NO: 9
309 <211> LENGTH: 509
310 <212> TYPE: DNA
311 <213> ORGANISM: Zea mays
313 <220> FEATURE:
314 <221> NAME/KEY: unsure
315 <222> LOCATION: (162)
316 <223> OTHER INFORMATION: n = A, C, G, or T

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 11/04/2002
PATENT APPLICATION: US/09/699,652A TIME: 17:50:30

Input Set : A:\PTO.AMC.txt
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:5; N Pos. 526, 561, 585, 593, 664, 679
Seq#:7; N Pos. 46, 231
Seq#:8; Xaa Pos. 16
Seq#:9; N Pos. 162, 277, 284, 290, 295, 386, 406, 413, 443, 468, 484, 489
Seq#:10; Xaa Pos. 52, 90, 92, 96
Seq#:11; N Pos. 8, 20, 229, 236, 241, 249, 268
Seq#:12; Xaa Pos. 76, 78, 80, 83, 89
Seq#:15; N Pos. 12, 24, 29, 33, 43, 78, 182, 265, 300, 302, 306, 347, 351, 367, 370, 380
Seq#:15; N Pos. 386
Seq#:16; Xaa Pos. 8, 10, 11, 15, 61
Seq#:23; N Pos. 226, 315, 462, 1306, 1349, 1359, 1368, 1373
Seq#:24; Xaa Pos. 50, 80, 129
Seq#:25; N Pos. 601
Seq#:26; Xaa Pos. 45
Seq#:27; N Pos. 7, 15, 27, 38, 50, 94, 99, 103, 105, 117

VERIFICATION SUMMARY
PATENT APPLICATION: US/09/699,652A

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Input Set : A:\PTO.AMC.txt
Output Set: N:\CRF4\11042002\I699652A.raw

L:170 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:480
L:171 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:540
L:173 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:660
L:227 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:0
L:230 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:180
L:254 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:0
L:376 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:120
L:378 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:240
L:380 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:360
L:381 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:420
L:382 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:480
L:419 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10 after pos.:48
L:425 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10 after pos.:80
L:475 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:0
L:478 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:180
L:479 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:240
L:524 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:64
L:527 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:80
L:737 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15 after pos.:0
L:738 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15 after pos.:60
L:740 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15 after pos.:180
L:741 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15 after pos.:240
L:742 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15 after pos.:300
L:743 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15 after pos.:360
L:771 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16 after pos.:0
L:780 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16 after pos.:48
L:1124 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:180
L:1126 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:300
L:1128 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:420
L:1142 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:1260
L:1143 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:1320
L:1176 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24 after pos.:48
L:1179 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24 after pos.:64
L:1191 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24 after pos.:128
L:1245 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25 after pos.:600
L:1279 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26 after pos.:32
L:1380 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27 after pos.:0
L:1381 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27 after pos.:60